

JAPANESE [JP,05-036608,U]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS EXAMPLE DESCRIPTION OF DRAWINGS
DRAWINGS

[Translation done.]

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CLAIMS

[Utility model registration claim]

[Claim 1] Pickup is supported to revolve free [sliding] to a pickup chassis, and this pickup chassis is supported to revolve by the basic chassis by the shaft of a pair. In the pickup support device of the disk player which can carry out include-angle adjustment of the pickup chassis in a direction perpendicular to said sliding direction to this basic chassis One shaft is supported making the set-up side of a basic chassis energize by the elastic member. The shaft of another side is the pickup support device of the disk player characterized by the ability to perform include-angle adjustment of a pickup chassis by being supported by the spiral slot of the cam which was made to penetrate the slot of the set-up side of another side of a basic chassis, and was set up by the basic chassis, and rotating this cam.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design equips a turntable with the disk which digital-signal-izes music or an image and is recorded with methods, such as light, optical MAG, or static electricity, or it records information on a disk by pickup, it starts the disk player which reproduces the information recorded on the disk, especially it is related with the adjustment device of the relative position of this disk and pickup.

[0002]

[Description of the Prior Art]

In an optical disk player, a disk recording surface and the optical axis of pickup must become a right angle, if this include angle has shifted, this optical axis will become an ellipse-like focus by the disk recording surface, and the pit of an adjoining track will be read. For this reason, the noise of the striped pattern by the cross talk comes out to a playback screen, and image quality deteriorates. Tangential skew adjustment (henceforth skew adjustment) prevents this.

[0003]

Moreover, if the drive straight line of the medial axis of a disk, i.e., the medial axis of a turntable and the optical axis of pickup, has shifted, this optical axis will not be perpendicularly crossed to a track (pit) at the time of a track search etc., but will be crossed aslant at it. For this reason, reading precision falls, the search time becomes long, or a search becomes impossible in being the worst. R DIPENDENSU adjustment (henceforth RD adjustment) prevents this.

What uses separate adjustment devices (cam etc.) respectively is known for the Prior art in the above-mentioned skew adjustment and RD adjustment.

[0004]

[Problem(s) to be Solved by the Device]

However, in said Prior art, since two adjustment devices were used, components mark increased, the device became complicated and there was a problem that tuning took time amount.

This design aims at solving the above-mentioned trouble.

[0005]

[Means for Solving the Problem]

In order to attain the above-mentioned purpose, as for this design, pickup is supported to revolve free [sliding] to a pickup chassis. This pickup chassis is supported to revolve by the basic chassis by the shaft of a pair. In the pickup support device of the disk player which can carry out include-angle adjustment of the pickup chassis in a direction perpendicular to said sliding direction to this basic chassis One shaft is supported making the set-up side of a basic chassis energize by the elastic member. It is characterized by the ability of include-angle adjustment of a pickup chassis to do the shaft of another side by being supported by the spiral slot of the cam which was made to penetrate the slot of a set-up of another side of a basic chassis, and was set up by the basic chassis, and rotating this cam.

Hereafter, the example of this design is explained using a drawing. Drawing 1 the cross-section side elevation of an important section, and drawing 3 for the top view of an important section, and drawing 2 The perspective view of an adjusting cam, Drawing 4 is the whole top view, drawing 5 is a cross-section top view, and inside installation immobilization of the Maine chassis (2) of the cabinet (1) of a cube type is carried out. While attaching a basic chassis (4) in the Maine chassis (2) center section free [rise and fall] through a right-and-left slide plate (3) and (3), the turntable (6) is made to support to revolve free [rotation] to said chassis (4) top-face side through a revolving shaft (5).

[0007]

Moreover, the pickup motor which a pickup movable rack gear (12) is made to fix to said cradle (8), and a drive gear (13) is meshed on this rack gear (12), and is attached behind [left-hand side] a pickup chassis (11) while attaching laser pickup (7) in a cradle (8) and preparing said cradle (8) in a pickup chassis (11) free [sliding] through a guide shaft (9) and (10) at a cross direction (14)

Both-way sliding of the pickup (7) is carried out through each gear (12) and (13) by **** inversion control, and it constitutes so that pickup (7) may be made to attach and detach linearly to a turntable (6) axis.

[0008]

Furthermore, disk ***** which carries the laser disk (15) whose diameter is 30cm (16), Disk ***** which carries the minor diameter laser disk (17) whose diameter is 20cm (18), Disk ***** which carries the compact disk (19) whose diameter is 12cm (20). While a diameter forms in multistage disk ***** (22) which carries the minor diameter compact disk (21) which is 8cm on the same axis on the tray (23) top face The rail slot for sliding (24) and (25) are formed in the both sides of a tray (23), and an in-and-out rack gear (26) is respectively formed in the inferior surface of tongue of a tray (23).

[0009]

Moreover, while making the rail for in-and-out guidance (27), and (28) fix to the Maine chassis (2) both sides It is the thing which makes the Maine chassis (2) support to revolve the loading gear (30) which carries out a forward inversion by the loading motor (29). Fitting of the sliding of the rail slot (24) on the tray (23) and (25) is made free to the rail (27) of the Maine chassis (2), and (28). A loading gear (30) is meshed on the in-and-out rack gear (26) of a tray (23). A tray (23) is made to go in and out in a cabinet (1) by the forward inversion drive of this gear (30), and it constitutes so that a disk (15), (17), (19), and (21) may be moved to an external exchange location from a turntable (6) location.

[0010]

Furthermore, the left and right laterals of said pickup chassis (11) order **** middle are made to connect with the set-up side (31) of a basic chassis (4), and (32) through a shaft (41) and (42), and it is a pickup chassis (11) focusing on this shaft (41) and (42).

They are a worm gearing (36) and a worm wheel (35) by the tilt motor (37) which a basic chassis (4) anterior-part top face is made to support a cylindrical shape tilt cam (34) to revolve through a pivot (33), enabling free rotation, and a worm wheel (35) is really formed in a tilt cam (34), and meshes this worm wheel (35) and makes a basic chassis (4) fix a worm gearing (36) to it while attaching in the upper and lower sides free [a seesaw movement].

****, carry out the forward inversion of the tilt cam (34), and the adjusting-cam side (38) formed in this cam (34) upper-limit side is made to contact a pickup chassis (11) anterior-part inferior surface of tongue, and it constitutes so that you may make it go up and down this pickup chassis (11) and tilt adjustment of pickup (7) may be performed.

[0011]

Moreover, it considers as a slot (32a), and a shaft (42) penetrates this hole (32a), and said set-up side (32) is made to contact the spiral slot (43a) of the cam (43) mentioned later, and is considering the tip as the configuration which makes an elastic member (40) construct across between a pickup chassis (11) and a basic chassis (4) in the set-up side (31) of another side.

face of a basic chassis (4) and this cam (43) is shown in drawing 3, it is considering as the structure to which the vertical plane (43b) of this slot was not made into this cam (43) periphery and the concentric circle, but carried out eccentricity a little.

[0012]

Next, an adjustment procedure is explained using drawing 2.

When the optical axis of pickup (7) leans to the left to the medial axis of a turntable (6) in drawing 2, make the right rotate a cam (43), and make a shaft (42) meet a spiral slot (43a), it is made to lean caudad, and the inclination of this optical axis and the medial axis of a turntable (6) is adjusted. A left is made to push this shaft (42) in the vertical plane (43b) where the spiral slot (43a) of this cam (43) carried out eccentricity of the gap in the method of this right since the migration straight line of the optical axis of pickup (7) shifted to the method of the drawing 3 right to the medial axis of a turntable (6) at this time, and the migration straight line of this optical axis and the medial axis of a turntable (6) are made in agreement.

[0013]

Moreover, when the optical axis of pickup (7) leans to the right, similarly, make the left rotate a cam (43), incline a shaft (42) up, this shaft (42) is made to contact the vertical plane (43b) which carried out eccentricity to this cam core side by the elastic member (40), and a gap to the left of the migration straight line of the optical axis produced by having leaned pickup (7) is adjusted. In addition, the above-mentioned angle of inclination and the gap distance to right and left are in a correlation, and are taken up (7).

***** is determined.

[0014]

[Effect of the Device]

According to this design, as explained to the detail above, by not preparing respectively the cam for skew adjustment and RD adjustment in according to, ** is also good, since this skew / RD adjustment can carry out by one cam, components mark can be reduced and simplification of a device can be attained.

Moreover, since the adjustment parts in a production process are also reducible, it becomes possible to shorten this adjustment time amount.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]

This design equips a turntable with the disk which digital-signal-izes music or an image and is recorded with methods, such as light, optical MAG, or static electricity, or it records information on a disk by pickup, it starts the disk player which reproduces the information recorded on the disk, especially it is related with the adjustment device of the relative position of this disk and pickup.

[0002]

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PRIOR ART

[Description of the Prior Art]

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Moreover, if the drive straight line of the medial axis of a disk, i.e., the medial axis of a turntable and the optical axis of pickup, has shifted, this optical axis will not be perpendicularly crossed to a track (pit) at the time of a track search etc., but will be crossed aslant at it. For this reason, reading precision falls, the search time becomes long, or a search becomes impossible in being the worst. R DIPENDENSU adjustment (henceforth RD adjustment) prevents this.

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EFFECT OF THE INVENTION

[Effect of the Device]

According to this design, as explained to the detail above, by not preparing respectively the cam for skew adjustment and RD adjustment in according to, ** is also good, since this skew / RD adjustment can carry out by one cam, components mark can be reduced and simplification of a device can be attained.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]

However, in said Prior art, since two adjustment devices were used, components mark increased, the device became complicated and there was a problem that tuning took time amount.

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MEANS

[Means for Solving the Problem]

In order to attain the above-mentioned purpose, as for this design, pickup is supported to revolve free [sliding] to a pickup chassis. This pickup chassis is supported to revolve by the basic chassis by the shaft of a pair. In the pickup support device of the disk player which can carry out include-angle adjustment of the pickup chassis in a direction perpendicular to said sliding direction to this basic chassis One shaft is supported making the set-up side of a basic chassis energize by the elastic member. It is characterized by the ability of include-angle adjustment of a pickup chassis to do the shaft of another side by being supported by the spiral slot of the cam which was made to penetrate the slot of a set-up of another side of a basic chassis, and was set up by the basic chassis, and rotating this cam.

[0006]

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EXAMPLE

[Example]

Hereafter, the example of this design is explained using a drawing. Drawing 1 the cross-section side elevation of an important section, and drawing 3 for the top view of an important section, and drawing 2 The perspective view of an adjusting cam, Drawing 4 is the whole top view, drawing 5 is a cross-section top view, and inside installation immobilization of the Maine chassis (2) of the cabinet (1) of a cube type is carried out. While attaching a basic chassis (4) in the Maine chassis (2) center section free [rise and fall] through a right-and-left slide plate (3) and (3), the turntable (6) is made to support to revolve free [rotation] to said chassis (4) top-face side through a revolving shaft (5).

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Moreover, the pickup motor which a pickup movable rack gear (12) is made to fix to said cradle (8), and a drive gear (13) is meshed on this rack gear (12), and is attached behind [left-hand side] a pickup chassis (11) while attaching laser pickup (7) in a cradle (8) and preparing said cradle (8) in a pickup chassis (11) free [sliding] through a guide shaft (9) and (10) at a cross direction (14)

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a pivot (33), enabling free rotation, and a worm wheel (35) is really formed in a tilt cam (34), and meshes this worm wheel (35) and makes a basic chassis (4) fix a worm gearing (36) to it while attaching in the upper and lower sides free [a seesaw movement].

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Moreover, it considers as a slot (32a), and a shaft (42) penetrates this hole (32a), and said set-up side (32) is made to contact the spiral slot (43a) of the cam (43) mentioned later, and is considering the tip as the configuration which makes an elastic member (40) construct across between a pickup chassis (11) and a basic chassis (4) in the set-up side (31) of another side. Furthermore, while making a spiral slot (43a) form in a cylindrical periphery as the cam for RD and skew adjustment (43) is made to support to revolve near the set-up side (32) on the top face of a basic chassis (4) and this cam (43) is shown in drawing 3, it is considering as the structure to which the vertical plane (43b) of this slot was not made into this cam (43) periphery and the concentric circle, but carried out eccentricity a little.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The top view of an important section

[Drawing 2] The cross-section side elevation of an important section

[Drawing 3] The perspective view of the cam for adjustment

[Drawing 4] The whole top view

[Drawing 5] Cross-section top view

[Description of Notations]

(4) Basic chassis

(6) Turntable

(7) Pickup

(11) Pickup chassis

(31) (32) Set-up side

(32a) Slot

(40) Elastic member

(41) (42) Shaft

(43) Cam

(43a) Spiral slot

(43b) Vertical plane

[Translation done.]

(19)日本国特許庁(JP)

(12) 公開実用新案公報(U)

(11)実用新案出願公開番号

実開平5-36608

(43)公開日 平成5年(1993)5月18日

(51)Int.Cl. ⁵	識別記号	庁内整理番号	F I	技術表示箇所
G 1 1 B 7/08	A	8524-5D		
21/02	B	8425-5D		
21/20	C	9197-5D		

審査請求 未請求 請求項の数1(全 3 頁)

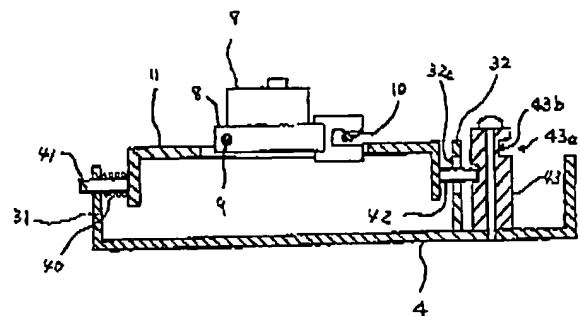
(21)出願番号	実願平3-83076	(71)出願人	000201113 船井電機株式会社 大阪府大東市中垣内7丁目7番1号
(22)出願日	平成3年(1991)10月14日	(72)考案者	久米 秀樹 大阪府大東市中垣内7丁目7番1号 船井 電機株式会社内

(54)【考案の名称】 ディスクプレーヤのピックアップ支持機構

(57)【要約】

【目的】 光学式ディスクプレーヤにおいて、タンジェンシャルスキュー調整とアールディペンデンス調整の機構の簡素化を図り、調整作業を簡略化することを目的とする。

【構成】 ピックアップがピックアップシャーシに対し摺動自在に軸支され、該ピックアップシャーシが一對のシャフトによって基本シャーシに軸支され、該基本シャーシに対し前記摺動方向と垂直な方向においてピックアップシャーシの角度調整できるディスクプレーヤのピックアップ支持機構において、一方のシャフトは基本シャーシの立設面に弾性部材により付勢させながら支持され、他方のシャフトは基本シャーシの他方の立設面の長穴を貫通させ基本シャーシに立設されたカムの螺旋溝により支持され、該カムを回転させることによってピックアップシャーシを傾斜及びシャフト軸方向に移動調整する。



(2)

実開平5-36608

1

2

【実用新案登録請求の範囲】

【請求項1】 ピックアップがピックアップシャーシに対し摺動自在に軸支され、該ピックアップシャーシが一對のシャフトによって基本シャーシに軸支され、該基本シャーシに対し、前記摺動方向と垂直な方向においてピックアップシャーシの角度調整できるディスクプレーヤのピックアップ支持機構において、一方のシャフトは基本シャーシの立設面に弾性部材により付勢させながら支持され、他方のシャフトは基本シャーシの他方の立設面の長穴を貫通させ基本シャーシに立設されたカム10の螺旋溝により支持され、該カムを回転させることによってピックアップシャーシの角度調整ができることを特徴とするディスクプレーヤのピックアップ支持機構。

【図面の簡単な説明】

【図1】 要部の平面図

【図2】 要部の断面側面図

* 【図3】 調整用カムの斜視図

【図4】 全体の平面図

【図5】 断面平面図

【符号の説明】

(4) 基本シャーシ

(6) ターンテーブル

(7) ピックアップ

(11) ピックアップシャーシ

(31) (32) 立設面

(32a) 長穴

(40) 弾性部材

(41) (42) シャフト

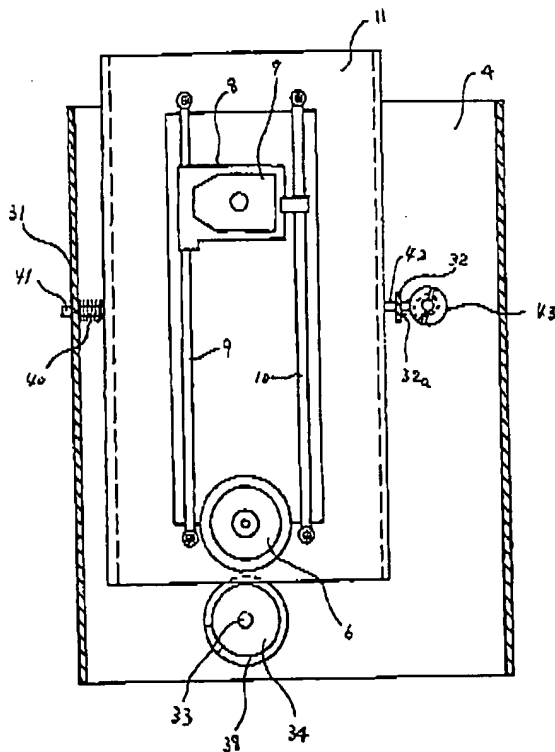
(43) カム

(43a) 螺旋溝

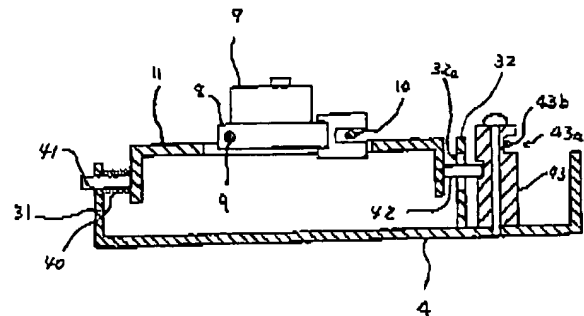
(43b) 垂直面

*

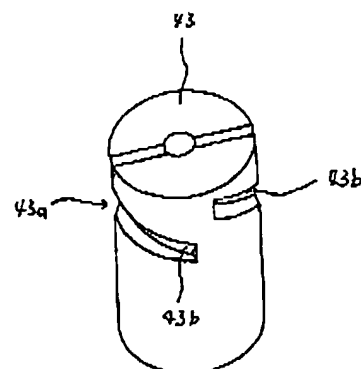
【図1】



【図2】



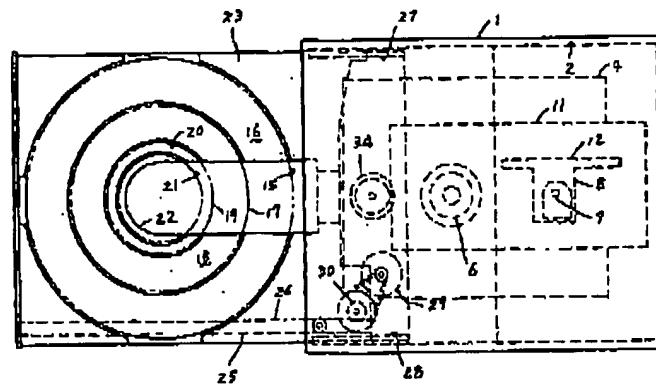
【図3】



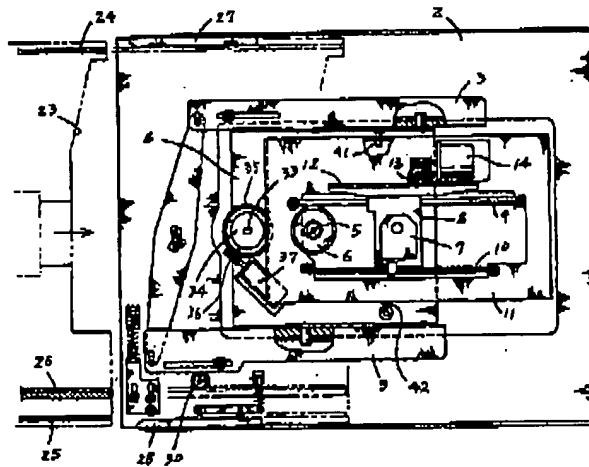
(3)

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【図4】



【図5】



(4)

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【考案の詳細な説明】**【0001】****【産業上の利用分野】**

本考案は音楽または映像などをデジタル信号化して光、光磁気または静電気などの方式により記録するディスクをターンテーブルに装着し、ピックアップによりディスクに情報を記録するまたはディスクに記録された情報を再生するディスクプレーヤに係り、特に該ディスクとピックアップとの相対位置の調整機構に関するものである。

【0002】**【従来の技術】**

光学式ディスクプレーヤにおいて、ディスク記録面とピックアップの光軸とは直角にならなければならないが、この角度がずれていると該光軸はディスク記録面で楕円状の焦点となり、隣接するトラックのピットを読み取ってしまう。この為、再生画面にはクロストークによる縞模様のノイズが出て画質が劣化する。これを防ぐのがタンジェンシャルスキュー調整（以下スキュー調整という）である。

【0003】

また、ディスクの中心軸すなわちターンテーブルの中心軸とピックアップの光軸の駆動直線とがずれていると、トラックサーチ時等に該光軸はトラック（ピット）に対して垂直に横切らず、斜めに横切ってしまう。この為、読み取り精度が低下し、サーチ時間が長くなったり最悪の場合にはサーチ不可能になる。これを防ぐのがアールディペンデンス調整（以下RD調整という）である。

従来の技術では上記スキュー調整及びRD調整を各々別個の調整機構（カム等）を用いているものが知られている。

【0004】**【考案が解決しようとする課題】**

しかしながら、前記従来の技術では2つの調整機構を用いている為、部品点数が増え機構が複雑となり、調整作業に時間がかかるという問題があった。

本考案は上記問題点を解決することを目的とする。

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【課題を解決するための手段】

上記目的を達成する為に本考案はピックアップがピックアップシャーシに対し摺動自在に軸支され、該ピックアップシャーシが一对のシャフトによって基本シャーシに軸支され、該基本シャーシに対し前記摺動方向と垂直な方向においてピックアップシャーシの角度調整できるディスクプレーヤのピックアップ支持機構において、一方のシャフトは基本シャーシの立設面に弾性部材により付勢させながら支持され、他方のシャフトは基本シャーシの他方の立設の長穴を貫通させ基本シャーシに立設されたカムの螺旋溝により支持され、該カムを回転させることによってピックアップシャーシの角度調整ができることを特徴とする。

【0006】

【実施例】

以下、本考案の実施例を図面を用いて説明する。図1は要部の平面図、図2は要部の断面側面図、図3は調整カムの斜視図、図4は全体の平面図、図5は断面平面図であり、箱形のキャビネット(1)のメインシャーシ(2)を内設固定させ、メインシャーシ(2)中央部に左右スライド板(3)(3)を介して基本シャーシ(4)を昇降自在に取付けると共に回転軸(5)を介してターンテーブル(6)を前記シャーシ(4)上面側に回転自在に軸支させている。

【0007】

また、レーザピックアップ(7)を受台(8)に取付け、ガイドシャフト(9)(10)を介してピックアップシャーシ(11)に前記受台(8)を前後方向に摺動自在に設けると共に、前記受台(8)にピックアップ移動ラックギヤ(12)を固設させ、該ラックギヤ(12)にドライブギヤ(13)を噛合させ、ピックアップシャーシ(11)の左側後方に取付けるピックアップモータ(14)の正逆転制御により各ギヤ(12)(13)を介してピックアップ(7)を往復摺動させ、ターンテーブル(6)軸芯に対しピックアップ(7)を直線的に接離させるように構成している。

【0008】

さらに、直径が30cmのレーザディスク(15)を載せるディスク載せ面(

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面(18)と、直径が12cmのコンパクトディスク(19)を載せるディスク載せ面(20)と、直径が8cmの小径コンパクトディスク(21)を載せるディスク載せ面(22)とを、トレイ(23)上面で同一軸芯上に多段的に形成すると共に、摺動用レール溝(24)(25)をトレイ(23)の両側に、また出入ラックギヤ(26)をトレイ(23)の下面に各々形成する。

【0009】

また、メインシャーシ(2)両側に出入案内用レール(27)(28)を固設させると共に、ローディングモータ(29)によって正逆転させるローディングギヤ(30)をメインシャーシ(2)に軸支させるもので、メインシャーシ(2)のレール(27)(28)にトレイ(23)のレール溝(24)(25)を摺動自在に嵌合させ、トレイ(23)の出入ラックギヤ(26)にローディングギヤ(30)を噛合させ、該ギヤ(30)の正逆転駆動によってトレイ(23)をキャビネット(1)内に出入させ、ターンテーブル(6)位置から外部交換位置にディスク(15)(17)(19)(21)を移動させるように構成している。

【0010】

さらに、前記ピックアップシャーシ(11)の前後幅略中間の左右側面を基本シャーシ(4)の立設面(31)(32)にシャフト(41)(42)を介して連結させ、該シャフト(41)(42)を中心にピックアップシャーシ(11)を上下にシーソー運動自在に取付けると共に、基本シャーシ(4)前部上面に支軸(33)を介して円筒形チルトカム(34)を回転自在に軸支させ、チルトカム(34)にウォームホイール(35)を一体形成し、該ウォームホイール(35)にウォームギヤ(36)を噛合させ、基本シャーシ(4)に固設させるチルトモータ(37)により、ウォームギヤ(36)及びウォームホイール(35)を介してチルトカム(34)を正逆転させ、該カム(34)上端面に形成した調整カム面(38)をピックアップシャーシ(11)前部下面に当接させ、該ピックアップシャーシ(11)を昇降させてピックアップ(7)のチルト調整を行うように構成している。

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また、前記立設面(32)は長穴(32a)とし、シャフト(42)は該穴(32a)を貫通し、その先端は後述するカム(43)の螺旋溝(43a)に当接させ、他方の立設面(31)にはピックアップシャーシ(11)と基本シャーシ(4)との間に弾性部材(40)を装架させる構成としている。

更に基本シャーシ(4)上面の立設面(32)近傍にRD及びスキュー調整用のカム(43)を軸支させており、該カム(43)は図3に示す如く、円柱の外周に螺旋状の溝(43a)を形成させると共に該溝の垂直面(43b)を該カム(43)外周と同心円とせず若干偏心させた構造としている。

【0012】

次に図2を用いて調整手順を説明する。

図2においてピックアップ(7)の光軸がターンテーブル(6)の中心軸に対して左に傾いている場合、カム(43)を右に回転させ、シャフト(42)を螺旋溝(43a)に沿わせて下方に傾けさせ、該光軸とターンテーブル(6)の中心軸との傾きを調整する。この時、ピックアップ(7)の光軸の移動直線はターンテーブル(6)の中心軸に対して図3右方へずれる為、この右方へのずれを該カム(43)の螺旋溝(43a)の偏心させた垂直面(43b)で該シャフト(42)を左方に押動させ、該光軸の移動直線とターンテーブル(6)の中心軸とを一致させる。

【0013】

また、ピックアップ(7)の光軸が右に傾いている場合は同様に、カム(43)を左に回転させ、シャフト(42)を上方に傾けさせ、該カム中心側に偏心させた垂直面(43b)に該シャフト(42)を弾性部材(40)により当接させ、ピックアップ(7)を傾けたことにより生ずる光軸の移動直線の左方へのずれを調整する。

なお、上記傾き角と左右へのずれ距離とは相関関係にありピックアップ(7)の構造により決定される。

【0014】

【考案の効果】

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カムを各々別に設けずとも良く、該スキュー／RD調整が1つのカムで行えるので、部品点数が削減でき、機構の簡素化が図れる。

また、製造工程における調整箇所も削減できるので該調整時間を短縮することが可能となる。

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